

CLAIMS:

1. A computer messaging system for implementing selective retransmission of messages between communication end points of a communication channel comprising:

a message having a retransmission indicator, said retransmission indicator providing for retransmission of said message when an initial transmission failure for said message occurs; and

a connection object, said connection object being instantiated at said communication end points, said connection object comprising;

a timeout tracking object for calculating a timeout value related to a round-trip messaging time for said communication channel;

a bandwidth tracking object for calculating a transmission bandwidth for said communications channel;

an outbound queue for storing said message prior to said initial transmission failure of said message over said communications channel; and

an outstanding queue for storing said message for said retransmission of said message over said communications channel upon said initial transmission failure.

2. The computer messaging system of claim 1 wherein said timeout value within said timeout tracking object includes a ready for retransmission value for determining a retransmission time for said message in said outstanding queue.

3. The computer messaging system of claim 1 wherein said message is sent over said communications channel when said transmission bandwidth exceeds a number of messages in said outbound queue by a threshold value.

4. A computer messaging method for implementing a selective retransmission of messages through a communications channel comprising:

selecting a message as a retransmittable message;

storing said selected message in an outbound queue;  
sending said message over said communications  
channel;

storing said selected message in an outstanding  
queue if an acknowledgement is not received in response to  
said sent message; and

resending said selected message.

5. The computer messaging method of claim 4  
further comprising determining a ready for retransmission  
value, said resending of said selected message occurring  
according to said ready for retransmission value.

6. The computer messaging method of claim 4  
further comprising determining a transmission bandwidth  
threshold for said communications channel, said sending of  
said selected message occurring according to said transmission  
bandwidth threshold.

7. A computer-readable media having computer  
instructions stored thereon, said computer instructions  
directed to a selective retransmission of messages through a  
communications channel, said computer instructions including  
instructions for:

selecting a message as a retransmittable message;

storing said selected message in an outbound queue;

sending said message over said communications  
channel;

storing said selected message in an outstanding  
queue if an acknowledgement is not received in response to  
said sent message; and

resending said selected message.

8. The computer-readable of claim 7 wherein said  
computer instructions further include instructions for  
determining a ready for retransmission value, said resending  
of said selected message occurring according to said ready for  
retransmission value

9. The computer-readable media of claim 7 wherein  
said computer instructions further include instructions for

determining a transmission bandwidth threshold for said communications channel, said sending of said selected message occurring according to said transmission bandwidth threshold.

10. A computer messaging system for implementing selective retransmission of messages between communication end points of a communication channel comprising:

a group of messages to be transmitted over said communications channel;

a selection object programmed as part of a virtual reality environment for selecting messages containing significant data from said group of messages; and

a retransmission object programmed as part of said virtual reality environment for retransmitting said selected messages, said retransmission object retransmitting said selected messages only after a first unsuccessful transmission of said selected messages over said communications channel.

11. A graphical display on a display screen for providing information related to a network connection comprising:

a packet transmission bar for providing graphical and numerical information related to said network connection including an instantaneous bandwidth for said network connection and an instantaneous round trip transmission time for said network connection;

an outbound packet status bar within said packet transmission bar for providing a graphical outbound packet status and a numerical outbound packet loss value, said outbound packet status bar including areas representing lost outbound packets as indicated by an unacknowledged transmission over said network connection; and

an inbound packet status bar within said packet transmission bar a graphical inbound packet status and a numerical inbound packet loss value, said inbound packet status bar including areas representing lost inbound packets as indicated by a missing packet sequence value received over said network connection.

12. The graphical display of claim 11 wherein said areas representing said lost outbound packets advance along said outbound packet status bar as additional packets are sent over said network connection and wherein said areas representing said lost inbound packets advance along said inbound packet status bar as additional packets are received over said network connection.

13. The graphical display of claim 11 wherein said outbound packet status bar and said inbound packet status bar are disposed end-to-end within said packet transmission bar, said adjacent ends representing a packet status for a most recently sent packet and a most recently received packet respectively.

14. A method of providing a graphical display on a display screen with information related to a network connection, said graphical display including a packet transmission bar having an outbound packet status bar portion and an inbound packet status bar portion, said method comprising:

displaying an outbound indicator at one end of said outbound packet status bar portion for outbound packets that are unsuccessfully sent over said network connection;

advancing said outbound indicator along said outbound packet status bar portion as additional packets are sent over said network connection;

displaying an inbound indicator at one end of said inbound packet status bar portion for inbound packets that are unsuccessfully received over said network connection; and

advancing said inbound indicator along said inbound packet status bar portion as additional packets are received over said network connection.

15. The method of claim 14 further comprising providing a bandwidth value indicating a bandwidth of said network connection.

16. The method of claim 15 further comprising providing a delay value indicating a round trip delay time for a packet on said network connection.

17. A computer-readable media having computer instructions stored thereon, said computer instructions directed to a method of providing a graphical display with information related to a network connection, said graphical display including a packet transmission bar having an outbound packet status bar portion and an inbound packet status bar portion, said computer instructions including instructions for:

displaying an outbound indicator at one end of said outbound packet status bar portion for outbound packets that are unsuccessfully sent over said network connection;

advancing said outbound indicator along said outbound packet status bar portion as additional packets are sent over said network connection;

displaying an inbound indicator at one end of said inbound packet status bar portion for inbound packets that are is unsuccessfully received over said network connection; and

advancing said inbound indicator along said inbound packet status bar portion as additional packets are received over said network connection.

18. The computer-readable media of claim 17 wherein said computer instructions further include instructions for providing a bandwidth value indicating a bandwidth of said network connection.

19. The computer-readable media of claim 17 wherein said computer instructions further include instructions for providing a delay value indicating a round trip delay time for a packet on said network connection.

20. A graphical display on a display screen for providing information related to a network connection comprising:

a packet transmission bar for providing a first graphical indicator related to said network connection, said

packet transmission bar including an outbound packet status bar for providing a graphical indication of lost outbound packets and a numerical outbound packet loss value, said packet transmission bar including an inbound packet status bar for providing a graphical indication of lost inbound packets and a numerical inbound packet loss value.